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Environmental Training Modules Module 5 - General Environmental Awareness

U.S. DEPARTMENT OF THE NAVY
CARDEROCK DIVISION,
NAVAL SURFACE WARFARE CENTER

in cooperation with
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ENVIRONMENTAL TRAINING MODULES

MODULE 5

GENERAL ENVIRONMENTAL AWARENESS

Prepared by:

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NSRP 0545
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TRAINING MODULES OVERVIEW

Executive Summary and User s Guide (NSRP 0540) Gives an overview of the 10 module set of environmental training modules, plus key issues involved in training in general. Instructions are supplied for how the modules can be modified to suit individual shipyards, as well as hardware and software requirements.

Module 1 (NSRP 0541) Good Environmental Practices

Content: Craft/trade-specific training on items that workers must deal with on a regular basis – material handling, labeling, waste generation/minimization, requirements awareness.

Recipients: New employees on arrival, and existing workers as a refresher.

Module 2 (NSRP 0542) Environmental Practices for Specific Craft/Trade Groups

Content: Specific training on air, hazardous materials, waste minimization, and related environmental considerations, with a focus on the generator personnel and their individual practices and procedures. Emphasis on those personnel likely to encounter a high incidence of problems during their regular duties.

Recipients: Specific craft/trade groups of workers.

Module 3 (NSRP 0543) Shipyard Incident Response Training

Content: Detailed presentation of response requirements specified by OSHA. Basic ingredients of a viable program for a shipyard – what is required and how to reach a satisfactory state of readiness. Includes specific duties of all participants, as well as how to ensure coordination and a common focus. This Module will provide the shipyards with an in-house capability for conducting this important training.

Recipients: Environmental Manager, Environmental Staff Personnel, Safety Engineer, Safety Personnel, Fire Department Personnel, Laboratory Staff and Technicians, Emergency Response Coordinator, Medical Personnel.

Module 4 (NSRP 0544) Shipyard Oil Pollution Prevention and PIC Training

Content: Provides a detailed overview on the federal regulatory oil pollution prevention and response requirements. Also contains specific training material for those shipyard employees with designated “Person in Charge” responsibilities.

Recipients: Ship and Craft Managers and Leadmen, Environmental and Safety Department Personnel, designated Persons in Charge.

Module 5 (NSRP 0545) General Environmental Awareness

Content: Overview of environmental statutes and regulations affecting shipyards, including responsibilities for compliance including both civil and criminal penalties for non-compliance. Includes an overview and explanation of environmental processes - how laws are formulated, the role of environmental groups, consultants, advisers.

Recipients: Senior Management

Module 6 (NSRP 0546) Technical Overview of Environmental Statutes and Regulations

Content: A general but in-depth overview of all environmental statutes and regulations with a focus on shipyard interests, and emphasis on the technical aspects of the requirements.

Recipients: Environmental Managers and staff personnel.

Module 7 (NSRP 0547) Environmental Requirements of Concern to Shipyards

Content: General overview of ALL requirements as they apply to shipyards. Emphasis on technical aspects and actions needed for compliance, rather than on the penalties for non-compliance. Includes overall strategy for developing a strong environmental posture.

Recipients: Senior Management, Supervisors, Generator Personnel; all workers who interface with environmental matters.

Module 8 (NSRP 0548) Generation/Treatment/Minimization of Hazardous Waste

Content: Discussion of regulatory requirements and statutes that apply to shipyard hazardous waste activities. Stresses the high points of the laws, and how to satisfy them. Includes overview of training provided to hazardous waste operators.

Recipients: Middle-level Managers

Module 9 (NSRP 0549) Hazardous Waste Operator Training

Content: Detailed training on practices and procedures performed by hazardous waste operators. Includes reclamation techniques, safe handling practices, labeling/markings, inventory control, hazard minimization.

Recipients: Hazardous Waste Operators; helpers and assistants

Module 10 (NSRP 0550) Environmental Training for Subcontractor Personnel

Content: Briefing on environmental requirements and considerations applicable to all Subcontractor Personnel entering a shipyard environment.

Recipients: Subcontractor Personnel; visitors to a shipyard; transient personnel such as delivery agents, auditors, and oversight personnel.

General Environmental Awareness for Shipyard Management

Objective of this Training Session: To provide an introduction to the subject of environmental laws and regulations in the United States.

Introduction: Environmental law has evolved into a system of statutes, regulations, guidelines, factual conclusions and case specific interpretations which relate to each other. This system is complex in and of itself. It is made more challenging due to the fact that the technical foundation of the subject matter, environmental health and safety, has not fully matured, and high levels of uncertainties in the underlying body of law still exist. As a result of these perplexities, our system of environmental law is often perceived to be inequitable by both those who are subject to the requirements and those who believe they have been damaged by environmental degradation.

The Environmental Law System: The environmental law system in the United States is derived from the interaction of multiple sources, including:

1. laws (federal and state statutes and local ordinances);
2. regulations (promulgated by federal, state and local agencies);
3. court decisions interpreting laws and regulations;
4. the common law;
5. constitutions (both United States and states); and
6. treaties.

The interplay of these and other legal elements define the structure of the environmental law system in the United States. This system is continuing to evolve with both the enactment of new environmental statutes, and the application of existing law from different fields to achieve environmental goals. One example of this trend is the application of the existing civil rights statutes to issues of toxic chemical exposure on minority communities. This is usually referred to as *Environmental Justice* and represents an expansion of the use of the original statutes to achieve environmental and societal objectives.

Introduction to environmental laws and regulations in the United States

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Shipyard management can better respond to the evolving demands placed on their management skills and on company organization by being armed with a clearer understanding of how our environmental law system evolved, as well as how it is currently structured.

The Development of Environmental Law and Regulation:

The Federal legislative process used to enact environmental law is identical to the process used for other matters of the law. First, a bill is introduced in either the House of Representatives or the Senate. Bills are then referred to a committee for consideration. The committee(s), in considering a bill, may perform studies, hold hearings with knowledgeable witnesses, prepare reports and make recommendations on whether or not bills should pass. When the bill is reported out of committee, it is placed on calendar in the house where it originated in order to be considered, debated, amended and voted upon. If passed, the bill becomes an act.

Often the House and Senate pass different bills on the same subject area, and a conference of House and Senate representatives then meet to resolve any differences in the two versions of the legislation. After passage of one agreed upon version of the bill in both the House and Senate, the act is sent to the President of the United States. The act will become law if it is signed by the President, or if the President does not veto the act within ten days.

The process of developing and writing a bill, the passage of the bill by the House or Senate to become an act, and the act being signed into law by the President is typically a long procedure with much compromise performed along the way. This can result in confusing language, which more often than not can have significant unexpected consequences when implemented by federal and/or state agencies. The process can be seen to be imperfect from almost any perspective. However, it is a process that provides for the greatest participation from the affected entities involved.

Environmental Regulations: Environmental laws generally empower an administrative agency to develop and promulgate regulations necessary to implement the requirements of the statute. For Federal laws, agencies such as the Environmental Protection Agency, the

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United States Coast Guard and the Department of Transportation are examples of agencies that have and can implement law through regulation. The President may also empower an executive agency to promulgate regulations through an executive order.

Regulations are promulgated through a process of rule-making whereby proposed regulations are published, providing an opportunity for the public and interested stakeholders to comment through the submission of written comments. Additionally, public hearings are usually held whereby interested parties may provide comment by testifying at the hearing. The agency will review all the comments received and usually respond in writing regarding the general disposition of the comment. Based on the comments received, an agency may modify the proposed language of the regulation.

When the final regulation is developed it will be published and codified in the appropriate section of the code. For Federal regulations, the final regulations are codified into the *Code of Federal Regulations* (CFR).

The Role of Stakeholders in the Development of Environmental Laws and Regulation:

Stakeholder is the term generally used in the environmental process to identify those persons or parties that have an interest in the outcome of a legislative or regulatory action. These persons or parties may be those mandated by law to perform under the law or regulation or those persons that will be affected by the perceived outcome of the requirement. Typically, stakeholders will perceive both positive or negative outcomes to themselves or those they represent from a proposed legislative or regulatory action. The role of the stakeholder is to interact effectively with the legislative body or regulatory agency to achieve their desired goal. Several of the more frequently encountered stakeholders in the environmental process include:

- Citizen activists - This stakeholder is typically a private citizen representing themselves or a small group based upon a perceived need or impact. The citizen activist is often demanding that action be taken by a legislative body or regulatory agency to stop a perceived environmental

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problem that does or will directly effect their health or safety. Less commonly, but with increasing frequency, the citizen activist is involved in demanding that proposed environmental requirements be scaled back to protect their jobs or property rights. The citizen activist is usually restricted to a narrow set of issues that directly impacts their well-being.

- Community representatives - When a proposed environmental action may effect a large group of persons within a geographic area, community representatives often assume a stakeholder role. Community representatives include elected municipal leaders, religious organization leaders, neighbor associations, local trade and commerce groups, educational organizations and many others. Similar to the citizen activist, the perceived impact of a legislative or agency action may be positive or negative. Often various community representative stakeholders will be attempting to effect the outcome of the process in ways opposed to each other.
- Industry representatives - As business and industry are frequently the entities required to perform under environmental laws and regulations, their representatives have a clear stakeholder role in the process. As the implementation of environmental requirements in business typically increase the cost of doing business and/or effect potential market share, business has a substantial stake in assuring that the improvement in environmental protection quality is cost effective.
- Professional consultants - Profession consultants, which generally include lawyers, engineers, and scientists, are often involved as stakeholders in the legislative and regulatory process representing societal

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objectives or processes. For example, engineers and scientists are often involved in ensuring that a proposed requirement has an adequate scientific foundation to support its implementing requirements. Attorneys are often involved in ensuring that proposed requirements have been promulgated in a legally correct manner. Professional consultants may also be involved in assisting other stakeholders in developing and presenting legal or scientific information to support the stakeholder's position.

- Environmental organizations - Environmental organizations consist of those groups that typically have established memberships and environmental goals. The objectives of the membership are achieved through a coordinated strategy at the executive level of the organization. National examples of environmental organizations include the Sierra Club, the National Resource Defense Council and the Environmental Trust.

In addition to the stakeholders listed above, the regulatory agencies can and often assume the role of a stakeholder in the legal process. This typically happens when the agency is called upon to comment or provide testimony on the proposed action(s) of another agency or legislative body.

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Objective of this Training Session: To Provide an Overview of the Environmental Law System in the United States.

Introduction: The system of environmental law in the United States can be broken down into various elements which include the federal and state statutes, government agency regulations, court interpretation of the law and applicable elements of common law. This session provides an overview of these elements, as well as discussion as to how their interaction produced our system of environmental law.

Laws That Establish Compliance Obligations:

Environmental laws create compliance obligations on certain groups within our society, such as persons that discharge waste to the waters of the United States or owners of property that contain wetlands. The major federal environmental laws define most of the substantive compliance obligations for the environmental law system. These federal statutes do not, however, operate alone. There are other components of “environmental laws” that supplement or complement the programs which the federal environmental statutes establish, including state laws and federal and state regulations.

The major federal environmental laws include:

- a) Resource Conservation and Recovery Act and its amendments;
- b) Clean Air Act and its amendments;
- c) Comprehensive Environmental Response, Compensation, and Liability Act and its amendments;
- d) Superfund Amendments and Reauthorization Act;
- e) Emergency Planning and Community Right-to-Know Act;
- f) Federal Insecticide, Fungicide, and Rodenticide Act;
- g) National Environmental Policy Act;
- h) Oil Pollution Act of 1990;
- i) Toxic Substance Control Act and its amendments;

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- j) Safe Drinking Water Act; and
- k) Pollution Prevention Act of 1990.

The above list of titles illustrates the extensive subject matter of current federal environmental law. Even a cursory summary of the requirements contained within these statutes would require a manual far beyond the scope of this training session. In addition to the major environmental statutes listed above, there are numerous minor statutes that consistently come into play when determining the applicability and scope of the requirements for the operation of a shipyard facility.

State Statutes and Regulations Implementing the Federal Statutes: Many of the federal statutes, like the Clean Air Act and Clean Water Act, establish federal-state regulatory programs in which the states are given the opportunity to enact and enforce laws, meeting federal minimum criteria in order to achieve the regulatory objectives which Congress has established. In most instances, when the states have had the opportunity to take over regulatory programs in their jurisdictions, they have done so. States are generally the primary permitting and enforcement authorities subject to federal intervention only if they do not enforce effectively or rigorously enough.

State Laws Independent of the Federal Requirements: Many states provide their citizens and their environment with protection beyond that generally available under the federal statutes. Some states such as California, New Jersey and Florida have an extensive state law and regulatory system that provide strict standards independent of federal requirements. The laws in many states may be a more important factor in dictating the focus of compliance programs than the laws which exist at the federal level.

Tax Laws: There is a trend at both the state and federal levels towards using the tax laws to create incentives for environmentally benign products and activities, and disincentives against products and activities considered to be environmentally detrimental. As an example, many states have provided for the taxing of disposal of hazardous waste. This tax is intended to provide an incentive to reduce the generation of such waste.

Business Regulatory Laws: Innovative use of laws originally intended to regulate business practices are now being used to achieve environmental protection goals. Full

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disclosure requirements for property transfer and unfair business practices laws are examples of business laws being adopted for environmental purposes.

Local and Municipal Laws: Localities do have great powers to control the location and operation of facilities within their jurisdictions. Common local issues which can impact a facility's operation include the operation of the local waterworks and waste treatment plants, local recycling initiatives, zoning and noise control ordinances, nuisance laws, air emission requirements, landfill restrictions or closures, and local emergency planning. The impact of this kind of local action can be as immediate and severe as that of any taken at the state or federal level. From the perspective of an environmental law compliance program, local does not mean trivial.

Environmental Law and the Courts: As the courts interpret environmental laws and regulations and apply them to specific factual situations, they are continually determining what the law actually means in factual situations. This process provides for an evolving understanding and clarification of elements of the statutes over time as new factual situations arise and are tested in the courts. As a result, with new environmental statutes, there will be significant issues of contention that have not been put to the judicial test.

Common Law: Underlying the development of legal theory in the United States is a body of rules and principles relating to the government and security of persons and property which had its origin, development and formulation in England. These principles, known as the common law, are derived from the application of natural reason, an innate sense of justice and the dictates of conscience. Common law is not the result of legislative enactment. Rather, its authority is derived solely from usages and customs which have recognized, affirmed and enforced by the courts through judicial decisions.

Many important environmental issues are addressed through common law. In particular are civil suits in which the plaintiff (the party bringing the lawsuit) seeks to remedy the violation of a right. The three most frequently used types of common law actions that can be the basis of a lawsuit in the pollution control field are nuisance, trespass and negligence. Each of these actions is explained in greater detail below.

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Nuisance - Nuisance is defined as “that activity which arises from the unreasonable, unwarrantable or unlawful use by a person of his own property, working an obstruction or injury to the right of another or to the public, and producing such material annoyance, inconvenience, and discomfort that the law will presume resulting damage.”¹

The general rule is that a person may use his land or personal property in any manner he sees fit. However, this rule is subject to limitation: The owner must use his property in a reasonable manner. A nuisance arises whenever a person unreasonably uses his property to cause material injury or annoyance to a neighbor.

The most common form of environmental nuisance is noise pollution. In order to constitute a nuisance in the legal sense, generally, noise must be of such magnitude and intensity as to cause actual or psychological discomfort to persons of ordinary sensibilities. Noise from the operation of an industrial plant constitutes an actionable nuisance if it injuriously affects the health or comfort of *ordinary* people in the plant’s vicinity to an *unreasonable* extent. As no absolute standard for what level of noise is unreasonable exists, the determination of a noise nuisance rests on the facts on the individual case.

Smoke, dust, odors, other airborne pollutants, water pollutants and hazardous substances have also been held to be nuisances.

“Coming to a nuisance” is the phrase used to describe the defense that the complainant or plaintiff who is affected by the nuisance moved into the area where the “complained about activity” had already been in existence.

An example of “coming to a nuisance” occurs when someone moves onto property near to an airport or industrial complex and then complains of the nuisance that existed prior to his moving there. In general, the courts have held that if an individual purchases property with the knowledge of the

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¹ *Black s Law Dictionary* 1065 (6th ed. 1990).

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existence of a nuisance or that he came to the nuisance it does not defeat his right to the abatement of the nuisance or recovery of damages. This is based on the theory that the right to pure air and the comfortable enjoyment of property belong to property as much as the right of possession and occupancy.

Finally, with regard to nuisance actions, it must be noted that compliance with government requirements such as permit conditions is typically not a defense, if compliance still results in a nuisance condition. In these cases, additional steps may have to be taken to abate the nuisance in addition to maintaining compliance with agency rules, regulations and permit conditions.

Trespass - Trespass is an injury to, or interference with the possession of personal property, or an unlawful, forcible entry on another person's land.

Trespass to land is the type of trespass action that is generally used in pollution control cases. In action for trespass to land, entry upon another's land need not be in person. It may be made by causing or permitting a thing to cross the boundary of the premises. The trespass may be committed by casting material upon another's land, by discharging water, soot or carbon, by allowing gas or oil to flow underground onto someone else's land, but not by noise or light which are generally classed as nuisances.

Negligence - "Negligence" is "the omission to do something which a reasonable man, guided by those ordinary considerations which ordinarily regulate human affairs, would do, or the doing of something which a reasonable and prudent man would not do."² Negligence is that part of the law of torts which deals with acts not intended to inflict injury.

The standard of care required by law is that degree which would be exercised by a person of ordinary prudence under the same circumstances. This is often defined as the "reasonable man" rule, that is ,

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² *Black's Law Dictionary* 1032 (6th ed. 1990).

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what a reasonable person would do under all the circumstances.

In order to render the defendant liable, his act must be the proximate cause of injury. Proximate cause is that which in the natural and continuous sequence, if unbroken by an efficient intervening act, produces injury and without which the result would not have happened.

Persons harmed as a result of careless and improper disposal or handling of hazardous waste can recover for their losses under a negligence cause of action. Indeed, state and federal courts have long recognized this common law theory of recovery against defendants who engage in the negligent disposal of pollutants, such as hazardous waste. Where negligence can be established, it is no defense that the negligent action was in full compliance with all government regulations and permit conditions. On the other hand, noncompliance regulations or a permit may be *prima facie* evidence (proof without any more evidence) of liability in some states.

The assessment of liability for damages without requiring a showing of negligence is called “strict liability.” A landowner keeping a potentially dangerous substance on his land which, if permitted to escape, is certain to injure others, must make good the damage caused by the escape of the substance, regardless of negligence on his part.

The reasoning for this strict liability standard is that if someone is engaged in an ultra-hazardous or dangerous activity for profit, he should bear the burden of compensating others who are harmed by his activities.

Laws That Enforce Permits, Prohibitions And Penalties:

Although the environmental law’s mechanisms for enforcing its requirements are essentially the same as other laws, there are distinctive aspects to the overall enforcement package. Most notably are the ways in which the available mechanisms are used together to effectively compel fulfillment of environmental compliance.

Permits: Perhaps the most distinctive aspect of environmental enforcement is its extensive and effective

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use of permitting mechanisms. Particularly with laws as complex and technical as most of the environmental statutes, it is critical that there be an effective mechanism for bridging the generalities of the law to specific performance requirements.

The permit fulfills this need by, in effect, establishing the “law” for a particular discharge or activity. The requirement to obtain a permit and operate in compliance with it is an individualized and highly effective way of insuring that regulators are notified of releases or activities of which they need to be aware. It is also an effective way of assuring and demonstrating that the person required to comply is on notice of his obligations.

Enforcement Provisions of the Federal and State Environmental Statutes: Each of the major federal environmental statutes provides an array of enforcement tools to compel compliance with its mandates. Generally, these include:

- **Civil Penalties** ranging from \$10,000 to \$50,000 per violation or day of violation
- **Administrative Orders** to respond or abate, enforceable by civil and criminal sanctions
- **Civil Action for Relief** including prohibition or mandatory injunction enforced by judicial decree
- **Citizens Civil Actions** - to compel compliance with or collect damages for violation of the statute
- **Criminal Sanctions** against organizations and responsible individuals for misrepresentation or knowing or negligent violation of the statutes

There is no doubt that the federal environmental statutes and the regulations under them present a formidable set of reasons for a business or other organization to institute programs for aggressive compliance with environmental laws. They are supported and complemented by similar enforcement provisions in the state environmental statutes, as well as in local laws and ordinances.

General Purpose Criminal Laws: Laws from the criminal code, originally enacted to punish more traditional crimes, have been adopted to the prosecution of crimes which are essentially environmental. The criminal code provisions

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which have proven particularly useful in this connection include:

- Prohibition Against False Statements to the Federal Government - 18 U.S.C. 1001
- Mail Fraud Statutes - 18 U.S.C. 1341, 1343
- Conspiracy Laws - 18 U.S.C. 371

Even more traditional criminal laws, such as the murder statutes, have been used, at least at the state level, to successfully prosecute environmental offenses. These non-environmental laws have become almost important as the environmental statutes in defining the liability of violators.

The environmental law enforcement package is a carefully structured combination of methods - environmental and general purpose, traditional and newly conceived - which work together to bring serious consequences to those who fail to fulfill their environmental compliance obligations. This interaction has been extremely effective and will become even more formidable as the environmental law system matures.

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Objective of this Training Session: To understand the enforcement and liability issues associated with non-compliance of environmental requirements.

Introduction: There can be substantial negative consequences for failure to comply with the requirements of environmental laws and regulations. These consequences can fall on companies, as well as individuals within the company. Liability can be apportioned to the person who committed the act which resulted in the non-compliance, in addition to the person in the company that should have known and taken action to prevent the problem. Penalties range from “traffic ticket” fines to prison terms. It should be noted that liability can be assessed for not only errors of commission (“I knew it was hazardous waste and I threw it the garbage can anyway”) but also for errors of omission (“I was responsible for determining if it was hazardous waste, but I didn’t”). This training session will provide an overview of the issues of environmental liability and enforcement.

The Purpose and Types of Environmental Liability:

There are several purposes for imposing liability as a result of environmental non-compliance. As in other “crimes,” liability is imposed to encourage compliance or to deter non-compliance and secondly, to punish transgressors who fail or refuse to comply with the law. Environmental liability is also imposed to require persons responsible for causing environmental damage to remediate the problem, and to require responsible parties to make the injured whole, usually by paying damages. Forms of environmental liability fall into three main categories: penalties, remedies and compensation. Each of these general areas of liability is explained in greater detail below.

Penalties - Penalties can be classified based upon the process by which they are imposed, and to the degree of blame or responsibility that is attached to the act or omission to be penalized. The types of penalties available to ensure environmental compliance are administrative, civil and criminal.

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Administrative penalties are typically imposed by the implementing agency for a violation of a rule or regulation. Usually, there is no element of intent required for the determination that an administrative penalty is justified. The mere fact that an instance of non-compliance existed is all that is necessary. Penalties can take the form of monetary fines ranging from the hundreds to tens of thousands of dollars. Additionally, in the case of environmental non-compliance, each day of violation is typically considered to be a separate offense for which a penalty can be assessed.

Civil penalties are imposed by judicial actions filed in civil court. This can be the result of an environmental agency taking the company or person to court for prosecution, or a citizens suit action brought under the applicable environmental statute. Like administrative actions, civil penalties can range from a few hundred to tens of thousands of dollars per day of violation. While civil actions are usually taken against companies or organizations, in some cases, individuals are prosecuted if there is a compelling reason, such as deterrence of the same behavior by other individuals in the future.

Criminal penalties can be attached to both companies and individuals who have committed a prohibited act, or failed to perform what was legally required. Usually, but certainly not always, in addition to the act of commission or omission, some element of bad intent, recklessness or willful misconduct is required to demonstrate criminal conduct. Virtually every environmental statute now provides for some sort of criminal liability. The enforcers of environmental law understand that a sure way to change the “culture of compliance” in a company is to seek and obtain criminal sanctions against top company officials. While many people would agree that this technique is not fair, the reality is that it has become an acceptable practice of prosecutorial discretion, and can be a very real possibility in an environmental crime situation.

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Remedies - Many environmental laws contain the requirement to remedy the effects of releases or discharges of hazardous materials or wastes to the environment by performing some type of response action. The most common types of response actions taken by companies are: (1) a response to the release of oil and/or hazardous substances onto the land or water and (2) the clean-up of sites where the company has disposed of waste in the past. A third, but less common type of response is the “closure” or clean-up of hazardous waste treatment facilities after the facility is closed.

Under the Comprehensive Emergency Response, Compensation and Liability Act (“CERCLA”), persons who generate or participate in the disposal of hazardous pollutants that endanger the environment may be held jointly and severally liable for costs incurred by the government or private parties in order to respond to and/or remove the damage. Under the joint and several theory of liability, each person who contributed to the problem can be held responsible for the entire cost of clean-up. (In other words, each person in the group is both jointly and individually responsible for the cost of the clean-up.) In practice, this custom has not been perceived as being a particularly fair way of apportioning liability in such cases. While some efforts have been made to reform CERCLA, the element of joint and several liability remains intact, and will most likely remain intact for some time to come.

Compensation - The requirement to make “whole” those persons injured by another’s actions usually arise in the context of so-called “toxic tort” lawsuits to compensate for the loss or damage to natural resources. This compensation is in addition to any fines or penalties that government agencies may impose as a result of violations of laws or regulations that result in natural resource damage.

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Toxic tort actions can also be brought by individuals who claim that the environmental damage caused by a another person has personally injured them and/or their property. Personal injury lawsuits often allege that exposure to an injurious material or substance resulted in that person acquiring a disease, such as cancer.

Toxic tort actions can also be brought for recovery of property damage, if causation between the release of a hazardous material and the environmental damage to the property can be shown. On a few occasions, large areas and whole cities have been abandoned due to toxic contamination. In these cases, the claim for property damage can be huge in comparison to a personal injury claim.

Enforcement of Environmental Laws and Regulations:

Enforcement of environmental requirements generally fall to government representatives, such as the agency responsible for implementing a particular element of a statute or its regulations. Enforcement may also be a prosecutorial function, performed by the Department of Justice or State Attorney General. Administrative penalties are usually handled directly by the involved agency. Civil and criminal enforcement actions are handled by the prosecutors. Both the federal and state governments can play an enforcement role, with either the state or the federal government (or both) enforcing the requirements. Local laws are enforced by local governments.

Citizens also have the right to enforce environmental laws under many existing statutes. Typically, the citizen must notify the responsible person (and other required parties) that he is intending to sue them and provide specific information regarding when and how the law was violated. Usually the law requires a delay of sixty days prior to the filing of the lawsuit. In some cases, correction of the violation within this sixty day period negates the grounds for the lawsuit, and prevents it from going forward. If the lawsuit goes forward and violations are proven, a judge may issue

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an injunction to comply with the law and assess a civil penalty to be paid to the government. Citizens can recover their costs and attorney's fees from the wrongdoer if they are the prevailing party in the lawsuit.

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Objective of this Training Session: Gain an overview understanding of the environmental regulations that may effect shipyard operations and processes.

Introduction: From an environmental perspective, shipyards are considered to be a “highly-regulated” industry. One reason for these regulations lie in the fact that a broad range of pollutant generating industrial processes and operations occur in shipyards in a location where air, land and water meet. This proximity to the three environmental media also increases the potential that accidental discharges of oil or hazardous substances will impact the environment before there is an opportunity to contain and clean-up the release. These facts result in shipyards being subject to a greater number of environmental regulations than most industries. This training session outlines some of the basic federal regulatory schemes to which most shipyards are, or could be, subject. State environmental requirements may impose more stringent or additional requirements with which the shipyard must comply.

Overview of Environmental Regulations Affecting Shipyards:

Disposal of Waste: Shipyards are subject to regulations regarding the management and disposal of hazardous wastes and non-hazardous wastes (usually referred to as “solid waste”). All shipyards typically generate both hazardous waste and solid waste, both of which need to be managed and disposed of properly. Improper management and/or disposal of waste has the potential to result in severe penalties.

Hazardous Waste Determination - Anyone who generates waste materials, including small quantity generators, must determine if the waste is hazardous as defined by the Resource Conservation and Recovery Act (“RCRA”). Determining whether a waste is subject to RCRA Subtitle C is a two-step process:

1. Is the material a "solid waste"?
2. Is it "hazardous"?

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Solid waste is defined as: "any garbage, refuse, sludge from a waste treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and community activities, but does not include solid or dissolved material in domestic sewage."

A material that fits the definition of solid waste may be regulated as hazardous waste under RCRA if it poses a threat to human health or the environment. RCRA defines hazardous waste as "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may... pose a hazard to human health or the environment." The EPA has identified over 450 substances as "listed wastes" because they are known to be hazardous, but if a substance does not appear on a list, it does not mean it is not "hazardous." It could be classified as a "characteristic waste," or based on the waste generator's knowledge of the process or material used to produce the waste, or sampling results, the waste could be classified as hazardous.

Hazardous Waste Storage - Hazardous waste storage is defined by the RCRA rules as the means of holding hazardous waste for a temporary period, prior to treatment, disposal, or additional storage. While the definition of storage is broad, it also specifically distinguishes storage, which is temporary, from treatment and disposal, which both result in permanent changes to a hazardous waste. Anyone storing hazardous waste has to comply with the federal RCRA storage rules, which require storage facilities to be permitted. In addition, RCRA strictly regulates several types of hazardous waste storage, including storage in containers, tanks, containment building, surface impoundments, and waste piles.

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A Large Quantity Generator (“LQGs”) or a Small Quantity Generator (“SQGs”) may store hazardous wastes on-site without a storage permit provided that the generator complies with RCRA’s accumulation rule. While the accumulation rule sets forth requirements applicable only to LQGs or only to SQGs, the rule also requires both types of generators to comply with the following requirements:

- EPA ID number. All generators who generate more than 100 kg of hazardous waste per month are required to have an EPA identification (ID) number.
- Identification and labeling. All containers and tanks must be marked with the date that the storage period began, and be labeled with the words “Hazardous Waste.”
- Preparedness and prevention plan. Generators have to have a preparedness and prevention plan that details what emergency equipment and response teams are available to respond to a fire, explosion, or release of hazardous waste.

A LQG may accumulate hazardous waste on-site for up to 90 days without a storage facility permit if, in addition to the general requirements, the LQG complies with the following:

- Storage standards. To store hazardous waste, the generator needs to meet the federal container hazardous waste storage tank or containment building standards.
- Contingency plans. LQGs are required to have a written contingency plan. A contingency plan specifies what actions must be taken in response to a fire, explosion, or release of hazardous waste.

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- Employee training. LQGs are responsible for training employees to properly manage hazardous waste generated on-site.
- Biennial report. LQGs that ship waste off-site for treatment, storage, or disposal are responsible for submitting the federal biennial report to state environmental authorities.

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Hazardous Waste Accumulation - Generators of hazardous waste are responsible for removing the waste from their site to a permitted Treatment, Storage and Disposal Facility (TSDF”), before specific volume and time limits are exceeded. The specific limit is dependent on several factors, chiefly how much waste is generated within a month. Accumulation time limits give a generator a period in which storage of hazardous waste is allowed without a permit. The categories of hazardous waste generators and the allowed accumulation time are as follows:

- Large Quantity Generators (“LQGs”), that are generating more than 1,000 kilograms (kg) of hazardous waste or more than 1 kg of acutely hazardous waste per month, may accumulate waste for up to 90 days without a storage facility permit. However, to take advantage of the 90-day permit-free accumulation time period, the LQG has to meet specific on -site storage requirements.
- Small Quantity Generators (“SQGs”) are those generators producing more than 100 kg, but less than 1,000 kg of hazardous waste, and less than 1 kg of acutely hazardous waste per month. SQGs are allowed to store hazardous waste on-site for up to 180 days.
- Conditionally Exempt Small Quantity Generators (“CESQGs”) generate less than 100 kg of hazardous waste, or 1

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kg of acutely hazardous waste, and are not subject to any specific time limits. However, they may not accumulate more than 1kg of acutely hazardous waste or more than 1,000 kg of hazardous waste at any time.

Satellite Accumulation. LQGs may accumulate 55 gallons of any hazardous waste, or one quart of acutely hazardous waste, in containers or containment buildings that are away from the generator's main storage area for an unlimited amount of time, if certain storage rules are met.

Hazardous Waste Disposal - RCRA has extensive rules and restrictions covering the disposal of hazardous waste, which include disposal facility permit requirements and land disposal prohibitions. Disposal of hazardous waste is defined by RCRA as "the discharge, deposit, injection, dumping, spilling, leaking, or placing of solid or hazardous waste into any land or water so that such solid or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or any waters, including groundwaters."

In order for the RCRA hazardous waste rules to be applicable to a particular substance, the substance must first be identified as a "hazardous waste." Generators must first determine whether its generated material is, a "waste", secondly, a "solid waste", and, thirdly, a "hazardous waste." There are two methods for making this third determination. The substance may be a "listed" waste, that is, one of hundreds of substances that the EPA has placed on a list of hazardous wastes. Alternatively, the substance may be a "characteristic" hazardous waste, that is, one that through testing exhibits any of the following four hazardous waste characteristics: ignitability, corrosivity, reactivity, or toxicity.

Hazardous waste management standards established by regulation are dependent upon the volume of hazardous waste generated at the facility. In general, hazardous waste generators

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must identify waste as hazardous, obtain an EPA identification (ID) number, store the hazardous waste properly on-site, package the hazardous waste for shipment off-site, manifest the shipment, develop and maintain a contingency plan, train employees who manage hazardous waste, complete biennial reports, minimize the amount of hazardous waste generated and reduce the toxicity of the hazardous waste.

Solid Waste - Solid waste, as defined by RCRA, is a much broader term than it might seem. In this context, "solid" can include liquid-like substances and even gases. Whether a material is solid has more to do with its method of disposal than with its appearance. If the waste is treated, stored or disposed of (in the sense of being trucked away, burned, etc.), it is probably regulated under RCRA as a solid waste no matter what it looks like.

For a substance to be a 'waste,' it must be in the process of being disposed of. Disposal is a very broad term. Under RCRA, disposal means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water, so that such waste or any constituent of the waste may enter the environment or be emitted into the air, or discharged into any waters, including groundwaters. Under this definition, virtually any disposition, even passive storage in some circumstances, can constitute disposal.

RCRA separates wastes into two broad categories - hazardous and non-hazardous. Non-hazardous wastes are regulated under RCRA Subtitle D, while hazardous are regulated wastes under RCRA Subtitle C.

Non-hazardous (solid) waste is most often disposed of in landfills, which for years were regulated by state, county, and local requirements rather than federal rules. However, EPA's 1991 solid waste landfill rules established federal standards that required compliance by all municipal solid waste landfills by October 1993.

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Each state was responsible for implementing these new federal requirements.

Used oil - RCRA requires the EPA to establish standards for recycled used oil that will protect public health and the environment, and at the same time, not discourage used oil recycling. On September 10, 1992, the EPA issued its final rule on recycled used oil management standards. Primarily, the management standards apply to used oil generators, transporters, marketers, processors, and re-refiners. These management standards include storage and release response requirements, tracking and recordkeeping requirements, and bans on certain practices that have caused contamination problems (road oiling and the storage of used oil in non-permitted surface impoundments).

Used oil is any oil that is refined from crude oil, or any synthetic oil, that has been used, and as a result of use, is contaminated by chemical or physical impurities. Excluded from the used oil management regulations are:

- mixtures of used oil and diesel fuel mixed by the generator or an "aggregation point" for use in their own vehicles
- used oil that contains more than 50 ppm polychlorinated biphenyls (PCBs), which is regulated under 40 CFR 761
- used oil that is to be introduced into crude oil or natural-gas pipelines, and is regulated only until the point where it is introduced into the pipeline
- used oil produced on vessels from normal shipboard operations
- wastewater contaminated with *de minimis* quantities of used oil

Recycled used oil is defined as any *used oil* that is reused following its original use, for any purpose, including the purpose for which the oil

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was originally used. Oil that has been re-refined or reclaimed, burned for energy recovery, or reprocessed is also recognized as having been recycled. The majority of used oil recycling involves processing the used oil into fuel to be burned for energy recovery.

All generators, processors, re-refiners, transporters, and collectors of recycled used oil are affected by the used oil management standards, with the exception of some categories of minor used oil generators.

Depending on the concentration of pollutants, used oil burned for energy recovery, and any fuel produced from used oil by processing, blending, or other treatment, can either be "off-specification used oil," or "specification used oil." Each classification is subject to a different level of regulation.

Generators of used oil must keep storage units in good condition, label storage tanks and containers "used oil," clean-up spills or leaks, and use a transporter with an EPA ID number. Generators can store used oil in tanks and containers regulated under RCRA. Used oil cannot be stored in a surface impoundment, unless it is a permitted hazardous waste impoundment.

All aboveground tanks or containers that are used must be in good condition and be properly labeled as "used oil." Generators must ensure that all tanks and containers are free of any visible spills or leaks, as well as structural damage or deterioration. If used oil is stored in an underground storage tank ("UST"), that UST would have to comply with the standards for USTs. Fill pipes that transfer used oil into USTs must be marked clearly with the words "used oil."

The EPA has decided that used oil filters do not have to be treated as hazardous waste provided that the oil is drained from them, and the filter is not plated with terne (an alloy of tin and lead).

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Used oil filters must be properly drained in order to fit into the exemption. The EPA requires that filters remove used oil by either puncturing the filter anti-drain back valve or the filter dome end and hot-draining, hot-draining and crushing, dismantling and hot-draining or any other equivalent hot-draining method that will remove used oil.

Management of Hazardous Materials: Shipyards use many types of materials and chemical products that are potentially hazardous to human and/or environmental health. Examples include paints, thinners, petroleum products, abrasive blast media, solvents, adhesives, resins, compressed or liquefied gasses and many others. To ensure that these types of materials are managed in such a manner so as to minimize their hazards, both safety and environmental agencies have promulgated regulations regarding these substances. These regulations generally are concerned with how to store and manage hazardous materials on-site, train workers on the proper handling of hazardous materials, plan for hazardous materials accidents, and report releases of hazardous materials to the proper authorities.

Uniform Fire Code - The Uniform Fire Code ("UFC") is a model code setting construction standards for buildings and pertaining fixtures, in order to prevent or mitigate hazards resulting from fire or explosion. Each regional association of fire chiefs publishes its own fire code (for application within the region) and updates it periodically. Since each local fire jurisdiction administers its own fire code and may adopt the UFC, whole or in part, by ordinance, it takes time for amendments to the UFC to come into force. Local fire codes often contain some articles from earlier versions of the UFC, or may exclude certain provisions, and/or include unique local elements.

Part VII of the UFC addresses "special subjects" such as cryogenic fluids, flammable and combustible liquids, and hazardous materials. Many of these subjects cover hazardous and toxic substances and their uses. The two most

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important sections, or “Articles,” that regulate hazardous materials are Article 79 and Article 80.

Article 79 regulates the storage, handling and use of flammable and combustible liquids. These liquids must have warning signs, their containers *must* be compatible with their contents, and incompatible substances *must* be segregated.

Tanks must be properly vented, sprinkler systems must be installed in buildings used for chemical storage or application, and safe chemical mixing and onsite transportation practices instituted.

Article 80 addresses hazardous materials. This Article regulates the manufacture, storage, onsite transportation and use of these materials. Fire agencies can require facilities to separate incompatible materials and place materials in areas that do not present a fire or life hazard. This Article also requires hazard identification signs and procedures for spill responses.

OSHA Hazard Communication - The OSHA Hazard Communication Standard (“HCS”) is not an environmental regulation per say, having as its main purpose the protection of worker health and safety. However, this regulation contains numerous hazardous material management requirements and can therefore play a significant role in the facility’s pollution prevention program.

The purpose of the HCS is to ensure that employers understand, and inform employees about, the particular hazardous substances in their workplace, the health risks associated with them, and how to take protective action. If employees understand the hazards and risks associated with chemical products, they are more likely to manage the material in such a manner that also protects the environment.

HCS requires that companies maintain information regarding the chemicals and chemical products used at the facilities. This information is provided in the form of a Material Safety Data Sheet (“MSDS”) that contains

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specific data regarding hazards, chemical and physical properties, health risks and response procedures. The MSDS is also an important document for meeting many environmental reporting requirements, as the MSDS provides much information regarding the specific chemical constituents of materials used on-site.

OHSA requires that employers provide training at the time of an employee's initial assignment, and whenever a new hazard is introduced into the work area. This training is intended to provide the workers with very specific information regarding the chemical products with which they work. Effective training in - how to read an MSDS, understand chemical product labels, recognize chemical risks and use protective measures - will help ensure protection of employees as well as the air, land and water.

Emergency Planning and Response - The term "emergency planning and response," as used in environmental regulations, is both a specific term that refers to extremely hazardous substances under the Emergency Planning and Community Right-To-Know Act ("EPCRA") and Superfund Amendments and Reauthorization Act ("SARA"), and a general term that refers to emergency planning and preparedness requirements covering other hazardous wastes and substances.

Emergency planning requirements under SARA Title III are primarily directed to the state and local authorities. SARA Title III requires facilities to notify state and local agencies if at any one time the facility has an extremely hazardous substance on-site in a quantity greater than its threshold planning quantity. A facility is also covered under SARA Title III if it releases any reportable quantity of an extremely hazardous substance, or a CERCLA hazardous substance. Some states may require additional facilities to participate in the emergency planning process.

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RCRA Contingency Planning. Generators of hazardous waste are required to plan and prepare for accidents or spills during the transport, management and storage of hazardous waste on their site. A contingency plan is the document that sets out how a generator, treater, storer, or disposer of hazardous waste will respond to an emergency at its facility. In addition to a contingency plan, hazardous waste generators must also complete a preparedness and prevention plan, which details what response equipment and personnel will be available in the event of a fire, explosion, or release involving hazardous waste.

Spill Prevention, Control, and Countermeasure (SPCC) Program. The SPCC Program was implemented by the EPA in 1973 under the Clean Water Act. SPCC plans focus on procedures to prevent and control oil spills. The SPCC regulations require a regulated facility to prepare a written spill contingency plan within six months after operations commence. The facility must *implement* the plan no later than 12 months after operations commence. The facility notifies the EPA that the SPCC plan has been prepared, keeps the plan on file, and makes it available for review by the EPA. SPCC plans have to be certified by a registered professional engineer and prepared following good engineering practices.

With few exceptions, all shipyard facilities are subject to the requirement to prepare a SPCC plan and implement the required elements of the plan. The SPCC plan must be amended whenever there is a change in the shipyards design, construction, operation, or maintenance which substantially affects the potential for an oil discharge. The SPCC plan amendment must be implemented as soon as possible, but not later than six months after the change occurs.

The SPCC plan must be reviewed at least once every three years and amended to include more effective prevention and control technology to

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reflect any significant changes in the facility's design, construction, operation. or maintenance within six months of the change.

A civil penalty may be imposed for up to \$5,000 per day for each violation for failure to prepare a SPCC plan, have the SPCC plan and amendments certified by a registered professional engineer, implement the SPCC plan, submit appropriate information following a reportable spill, amend and implement the plan as required by the EPA regional administrator, amend the plan after change in facility design and/or review the plan every three years and amend if required.

Toxic Chemical Release Reporting - The Emergency Planning and Community Right-to-Know Act ("EPCRA") is an important law that has resulted in numerous regulatory requirements that affect almost all shipyards in their use and storage of hazardous chemicals. EPCRA is actually Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986, also known as SARA Title III.

Under EPCRA, there are provisions for emergency planning procedures and requirements for companies to report the presence of hazardous chemicals in the workplace to certain state and local authorities. The Act is administered by the EPA and state and local agencies, and is intended to provide the public and local governments with information concerning potential chemical hazards in their communities.

In addition to the federal rules, nearly every state has its own community right-to-know regulations, along with separate reporting forms, and state and local regulatory agencies.

One section of EPCRA (Section 313) requires subject facilities to submit a Toxic Chemical Release Inventory Report (Form R) each year to the EPA. The purpose of the reporting requirement is to inform the public and government officials about releases of specified

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toxic chemicals to the environment, assist the government, researchers, and the public in the conduct of research and data gathering, and to aid in the development of appropriate regulations, guidance, and standards. This reporting requirement is often referred to as section 313 reporting because it is from section 313 of EPCRA. The EPA has identified 300 toxic chemicals that are subject to this yearly reporting requirement. Shipyards commonly store and use many of the chemicals for which reporting may be required, including chemicals in marine coatings such as metals and solvents.

Release Reporting - Many federal and state laws require timely reporting of releases of various substances. Failure to report certain spills can result in substantial penalties imposed on both the facility and its employees.

The initial release notification is usually required immediately, or within 24 hours of knowledge of the release. In some cases, follow-up written reports are also required.

A release of a CERCLA hazardous substance, in quantities equal to or greater than their reportable quantity, must be immediately reported to the National Response Center. Such release is also subject to state and local reporting under EPCRA. EPCRA requires that releases of a reportable quantity of a hazardous substance (CERCLA), or extremely hazardous substance, must be reported to the state emergency response commission (SERC) for each state likely to be affected by the release. Notice is also provided to the community emergency coordinator for the local emergency planning committee (LEPC) of any area affected by the release. If the release is a CERCEA hazardous substance, the NRC must also be notified. Notice is required immediately upon discovery of the release.

EPCRA's emergency notification requirements cover facilities that produce, use, or store hazardous chemicals as defined by OSHA's hazard communication standard, as well as any

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release of a hazardous substance or extremely hazardous substance in excess of the reportable quantity.

The Clean Water Act requires immediate notification when there has been any discharge of oil into or upon navigable waters or adjoining shorelines that is not authorized by a permit. Any oil spill has to be reported if it violates water quality standards, or causes a sheen or discoloration of the surface water or adjoining shorelines, or causes a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

The NRC must be notified if more than the reportable quantity of a RCRA hazardous waste is released. Many of these wastes are contained on the CERCLA list. If a waste is on the CERCLA list, the CERCLA reportable quantity applies. If the waste is not on the CERCLA list, but exhibits the characteristics of a hazardous waste, (ignitable, corrosive, reactive, toxic) the reportable quantity is 100 pounds.

Under RCRA, UST owners or operators are required to report a suspected release from a tank within 24 hours to the EPA or designated state authorities (if the state is authorized by the EPA to administer its own UST program). In addition, the EPA requires notice of any spills or overfills of petroleum tanks in excess of 25 gallons that causes a sheen on surface water, or spills or hazardous substances in excess of its reportable quantity under CERCLA Superfund.

Special Pollutants: Several different types of hazardous materials are specifically regulated by the EPA and/or other agencies. Three of these special pollutants commonly encountered in shipyard repair and construction work include polychlorinated biphenyls ("PCB"), asbestos and lead based paint. These substances are regulated by both occupational and environmental health and safety perspectives.

PCB - Polychlorinated Biphenyls ("PCB") are a class of chemical compounds that may be found

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in a number of situations in the shipyard, particularly on ongoing repair operations. Additionally, PCBs may be found in electrical (and other) equipment in the shipyard facility. Most manufacture and distribution of PCBs has been phased out over the last twenty years. As a result, most of the regulatory requirements that shipyards must comply with deal with storage and disposal.

Generators, transporters, brokers, storers, and disposers of PCB wastes are now required to complete a manifest for "cradle-to-grave" tracking of PCB wastes containing more than 50 parts per million (ppm) PCBs.

The manifest system is similar to the hazardous waste manifest tracking system under RCRA. The PCB tracking system requires use of the RCRA manifest forms, and completion requirements follow the RCRA system closely (including retention of manifest records, manifest discrepancies, unmanifested waste reports, and exception reports).

The PCB manifest system also requires that the owner or operator of the disposal facility prepare a Certificate of Disposal for the PCBs and PCB items disposed of at the facility. The disposal facility must keep a copy of the Certificate, send a copy to the generator, and a copy to any commercial storer. These copies must be kept for three years.

Asbestos - Federal asbestos regulation is divided among a number of agencies, including the EPA, OSHA, and DOT. Many states have also implemented more stringent regulations governing asbestos.

The EPA administers and enforces regulations under National Emission Standards for Hazardous Air Pollutants ("NESHAP") rules that control asbestos manufacturing, building renovation and demolition activities, as well as asbestos emissions resulting from asbestos waste disposal and processing. The EPA must be

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notified whenever demolition or removal takes place, including onboard ships. If the amount of friable (crumbly) asbestos is less than 260 linear feet on pipes or 160 square feet on other facility components, the notice may be in any abbreviated form. During the removal or renovation project, the EPA requires that specific procedures be followed to prevent particulate asbestos material emissions to the outside air.

The EPA also has regulations proscribing the disposal of asbestos. All asbestos-containing waste material must be deposited as soon as is practical by the waste generator at an approved waste disposal site. Vehicles used to transport asbestos-containing waste material must be marked during the loading and unloading of waste so that the signs are visible. For all asbestos-containing waste material transported off the facility site, the shipyard must maintain waste shipment records similar to the form contained in the regulation. The shipyard must also provide a copy of the waste shipment record to the disposal site owners or generators at the same time as the asbestos-containing waste material is delivered to the disposal site, and retain copies of all waste shipments for at least two years.

OSHA's shipyard standard for asbestos regulates all shipyard work, including the demolition of salvage of structures and vessels, removal or encapsulation of materials, construction, alteration, repair, maintenance or renovation of vessels and structures, installation of asbestos products, clean-up of asbestos spills and transportation, disposal, storage, and containment of products containing asbestos at a construction site.

Storage Tanks: Tanks used to store hazardous substances or petroleum products are subject to a variety of federal rules and regulations governing various elements ranging from construction standards, monitoring, and removal. The types of regulatory programs that tanks can be subject to are generally

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divided as to the placement of the tank above ground or underground. It is important to note that the terms above ground and underground have regulatory definitions that can be confusing in some tank placement situations. That is to say, while a tank may appear to be above ground, it may actually be defined as an underground tank. A correct interpretation of the definitions is vital to understanding which set of regulatory requirements apply to any particular tank.

Underground storage tank requirements - the EPA's underground storage tank (UST) regulations apply to any person who owns or operates a UST or UST system. Both owners and operators are responsible for complying with the technical design and construction requirements, financial responsibility requirements, and corrective action requirements specified in the federal statute and rules. All federally regulated USTs must be registered, meet leak detection requirements and meet upgrade requirements (i.e., spill, overfill, and corrosion protection) by December 22, 1998.

In addition, owners and operators must meet financial responsibility requirements, perform a site check and corrective action in response to leaks, spills, and overfills, replace or close USTs that do not meet the upgrade requirements by December 22, 1998, follow regulatory rules during installation of new tanks, maintain records as required, and have periodic checks performed on corrosion protection and leak detection systems.

Several categories of full or partial exemptions and exclusions from the underground tank regulations are provided by the EPA. These lists should be consulted to determine whether an exemption or exclusion is applicable to any specific tank. For example, USTs that are used to hold hazardous waste and are regulated under RCRA, or USTs used in a water treatment systems that are regulated by a NPDES permit are excluded from the underground storage tanks regulations.

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There are specific requirements regarding the design, construction and installation of both existing and new petroleum and chemical tanks. Existing USTs must be protected from spills, overfills, and corrosion by December 1998. When new USTs are installed, they are required to have leak detection and protection from spills, overfills, and corrosion. All tanks and piping have to already have leak detection.

In regard to petroleum tank corrosion protection, existing tanks may be constructed of either coated and cathodically protected steel or fiberglass. Additionally, a steel tank clad with fiberglass, or tanks fitted with an added cathodic protection system, an interior lining, or a combination of interior lining and cathodic protection may be used.

New petroleum tanks must be constructed of either coated and cathodically protected steel or fiberglass, or be a steel tank clad with fiberglass.

By December 1993, all USTs should have met the federal leak detection requirements. The oldest tanks, which are the most likely to leak, had the earliest compliance deadlines. The EPA has identified the following leak detection methods that UST owners and operators can use to meet the federal requirements for detecting leaks from portions of both tanks and piping that routinely contain product. These methods include groundwater monitoring, vapor monitoring, secondary containment with interstitial or internal monitoring and automatic tank gauging systems.

If a underground tank leaks, the owner/operator must respond to contain and stop the release. Additionally, notification of the release must be made to the proper regulatory authorities. If soil or groundwater has been contaminated as a result of a UST release, corrective activities must usually be taken to mitigate any environmental damage.

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Recordkeeping is an important part of the UST regulatory requirements. UST owners and operators must maintain records on monitoring, cathodic protection, installation, release detection equipment calibration, maintenance, repairs, and closures. UST owners must also report on initial release abatement, initial site characterization, free product removal, clean-up, investigation, and corrective action. Records of testing results for any cathodic protection system, leak detection performance, and upkeep, repairs, and site assessment results at permanent closure must be kept for at least three years.

If the tank has not been used for a period of 12 months or more, the owner or operator must comply with permanent closure requirements. The owner or operator must notify authorities 30 days before closure, determine if leaks from the tank have damaged the environment (if there is damage, the owner or operator may be required to take corrective actions), and empty and clean the tank. In most instances, a closed tank is removed from the ground. If the tank is left in the ground, it must be filled with an inert material such as sand.

Air Quality Permitting: Currently there are three federal air permit programs under the Clean Air Act (CAA). Two of the federal permitting programs (preconstruction review and prevention of significant deterioration) are a part of the New Source Review (NSR) program. These air emissions permits have to be obtained prior to construction or modification of a major source of air pollution. The third program, Title V's operating permit program, is not part of the NSR program. A Title V operating permit will be issued after the completion of construction of a major source of a regulated air pollutant.

New Source Review Permitting - The NSR program was established by the 1977 amendments to the CAA and applies to major new sources of air pollution and modifications that cause a significant increase in emissions at existing major sources. Under this program,

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there are two types of permits: a preconstruction review permit for non-attainment areas, and a PSD permit for attainment areas.

- The preconstruction review permit. Preconstruction review permitting programs only affect non-attainment areas for one or more of the federal criteria pollutants. This permit is issued either by EPA or by the state environmental agency prior to construction or modification of a major source.
- The prevention of significant deterioration (PSD) permit. PSD permits only apply to geographical areas that are in attainment with federal standards for criteria pollutants. This permit is issued by the EPA or by the state environmental agency prior to construction or modification of a major source.

The Title V operating permit - Title V's operating permit program applies to all major sources of regulated air pollutants. Title V regulations have been completed by the EPA on the federal level, but are still in the process of being developed on the state level. Once the EPA approves a state's Title V operating permit program, that state's environmental agency will administer and enforce the Title V operating permit program.

Hazardous Air Pollutants and NESHAPs - Hazardous Air Pollutants ("HAP") are those pollutants identified in the Clean Air Act Amendments ("CAAA") that when emitted into the air have the potential to cause acute and/or chronic human health effects. The EPA is tasked with establishing National Emission Standards for Hazardous Air Pollutants ("NESHAP") that establish standards for HAP emissions on a pollutant by pollutant basis. The Clean Air Act Amendments of 1990 changed this regulatory approach. The CAAA now requires the EPA to issue standards, over a 10 year period, regulating

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emissions of 189 toxic air pollutants on industry sector basis. Shipbuilding and repair is one of the industry sectors for which the EPA was required to develop emission standards.

The shipbuilding and repair industry HAP emission standard was promulgated in the form of a Maximum Achievable Control Technology (“MACT”) rule. The rule would limit the volatile organic hazardous air pollutants (VOHAP) content of several categories of marine coatings, and specify work practices that minimize evaporative emissions and spills from the handling, transfer, and storage of organic thinning solvent and paint wastes.

Compliance with the hazardous air pollutants (HAP) rule would be determined using the volatile organic compounds (VOC) content of the coating as a surrogate for the VOHAP content. Shipyards must submit reports demonstrating compliance, or in the case of noncompliance, reports demonstrating the extent and cause(s) of violation. Reports will contain much but not all of the information kept in a facility's records, and shall be submitted every 6 months following the compliance date.

Water Quality: Water quality regulations affect shipyard operations in many ways. The disposal of industrial waste water from the shipyard to the surface waters, or to the industrial waste water sewer, will be subject to important environmental requirements. Pollutant discharges to the waters are regulated through a National Pollution Discharge Elimination Permit. Discharges to the industrial waste water sewer are regulated through an Industrial Waste Water Disposal Permit. The purpose of the permits are to eliminate, or reduce to the maximum extent possible, the discharge of pollutants to the waters of the United States. By this process, it is envisioned that polluted water bodies will be cleaned-up and clean water bodies will not be degraded.

NPDES Permitting - Any pollutant-containing wastewater that is discharged into waters of the United States is probably subject to the National

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Pollutant Discharge Elimination System (NPDES) program. The NPDES program requires dischargers to obtain permits from the EPA, or from their state, if their state is authorized by the EPA to administer the program.

The NPDES permit establishes what may be discharged and at what levels. After it is issued, the owner or operator will be required to comply with its conditions, including compliance with effluent standards for toxic pollutants. It also will require the owner or operator to maintain records, to perform monitoring, and to properly operate and maintain all treatment and control systems. Monitoring information will usually be recorded on a Discharge Monitoring Report (DMR).

Effluent limitations represent the maximum quantity, rate, and concentration of specific pollutants allowed to be discharged from industrial point sources, such as shipyards, into U.S. waters.

Federal regulations define effluent limitations as: “Any restriction established by a state or EPA on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean.”

Effluent limits are typically embodied in a federal or state NPDES permit and proscribe numerical concentration limits of specific chemical constituents. The limits may be expressed as instantaneous or time-weighted average concentrations. Monitoring of waste water discharges must be performed on a regular basis to determine if the shipyard discharges are in conformance with the effluent limits. Testing results are reported to the appropriate agency for review, and possible corrective action if warranted.

In addition, the permit will require the owner or operator to provide information and access for

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inspections and sampling on request to the permitting agency.

Permit violators are subject to civil penalties of up to \$10,000 per day of violation. Willful or negligent violations are punishable by fines of up to \$25,000 per day, and/or imprisonment for up to one year.

Stormwater Permits. Stormwater discharges result when pollutants on land are washed into surface waters by rain, snow melt, or other forms of precipitation. These are referred to in the regulations as "non-point-source discharges." Stormwater discharges are distinguished from point-source discharges, which are discharges from industrial activities directly into surface waters.

Many types of industrial facilities are required to obtain either federal or state NPDES permits to discharge stormwater. The largest number of regulated facilities are those associated with industrial activity. Regulated industrial facilities are identified either by their Standard Industrial Classification (SIC) code number or by a general description in the rule. Shipyards are one of the listed SIC code categories which are required to have storm water discharge permits.

There are two types of stormwater NPDES permits: individual permits and general permits. There are three different general permits: 1) general permit for industrial activities; 2) general permit for construction activities, and 3) multi-sector general permit for industrial activities. The multi-sector permit for industrial activities are applicable to industry sectors (including the ship building and repair industry) that are located in states that are not authorized by the EPA to administer the NPDES permit program, and are therefore subject to federal jurisdiction. In federally authorized states, most shipyards are subject to the requirements of a general industrial activities permit issued by a state or local agency.

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Storm water permits contain several common elements including requirements for the facility to prepare a Storm Water Pollution Prevention Plan (“SWPPP”) that identifies actual and potential sources of storm water pollution at the facilities. Once the sources of pollution have been identified, the facility develops and implements Best Management Practices (“BMP”) designed to reduce the level of pollutants to the maximum extent practical.

In addition to instituting BMPs, most facilities are required to implement a program of sampling and monitoring their stormwater discharges for pollutants likely to be discharged from the site. This information can then be used to determine the effectiveness of the BMPs in reducing the pollutant load to stormwater.

Significant civil and criminal penalties exist for violations of the Clean Water Act requirements of discharges of storm water, including penalties of up to \$25,000 per day of violation. Additionally, the Clean Water Act allows citizens to file lawsuits against companies to enforce the statute, regulations and permit conditions.

Industrial Waste Water Permitting - Industrial waste water discharges to a Public Owned Treatment Works (“POTW”) are subject to requirements imposed by the local waste water treatment agency. These requirements are derived from the fact that the discharges from the POTW after treatment must meet EPA limitations. To ensure that the POTW can continue to meet the federal standards, and that its treatment system is not “upset” by certain types of potential discharges into the system, discharge permits are issued to the system users.

Pretreatment is the method by which industrial dischargers treat their wastewater before discharging it into a POTW. POTWs include any system used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial waste in liquid form. It includes pipes,

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sewers, and conveyances if they are used to convey wastewater to a POTW treatment plant.

The twofold objective behind the establishment of pretreatment standards is to ensure that pollutants are not discharged into the systems, which would either "interfere" with the POTW's functioning, or would allow pollutants to "pass through" without first receiving appropriate pretreatment.

A pass through is defined as a discharge from the POTW into waters of the United States, which either because of quantity or concentration, causes the POTW to violate its National Pollutant Discharge Elimination System (NPDES) permit. An interference is defined as a discharge which inhibits the POTW, its treatment process, or its sludge processes, use, or disposal.

Pretreatment standards can be divided into prohibited discharges and categorical prohibitions. Prohibited discharges apply to all sources. The categorical prohibitions are additional standards that apply to particular industries.

The EPA has compiled a list of substances that are specifically prohibited from being introduced into POTWs. Prohibited discharges are applicable to all industrial dischargers.

Prohibited discharges into a POTW include pollutants that: (1) create a fire or explosion hazard; (2) cause corrosive structural damage to the POTW; (3) solid or viscous pollutants that would obstruct the flow in the POTW and cause an interference; (4) petroleum oil, or products of mineral oil origin in amounts that will cause interference; (5) pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems; (6) any trucked or hauled pollutants, except at discharge points designated by the POTW; (7) heat that would inhibit biological activity in the POTW, causing an interference; and, (8) any pollutant

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released at a flow rate or concentration that would cause an interference.

The federal rules specify that dilution is not an acceptable form of pretreatment, unless *expressly* authorized by an applicable pretreatment standard.

Categorical standards are additional industry-specific prohibitions. The EPA has not established industry specific prohibitions for shipyards at this time. Shipyards must therefore be in compliance with the requirements for prohibited discharges and any substance specific limitations imposed by the POTW that receives its waste water.

Emergency Response: When oil or a hazardous material is spilled or discharged into the environment an immediate response is required to contain and remove the material. To ensure that a facility is properly prepared to respond to an accident, both the U.S. Coast Guard and the EPA have requirements for response planning and training that affect shipyards. The Coast Guard requirements generally pertain to vessel operations and facility to/from vessel transfers of oil and/or hazardous substances. The EPA requirements pertain to those shipyard operations and/or processes that are considered to be “non-transportation” related. This would involve oil and hazardous substance storage tanks, facility transfers and pipelines.

EPA Facility Response Plans - The owner or operator of any non-transportation-related onshore facility (which includes that portion of the shipyard not subject to Coast Guard contingency planning requirements) that, because of its location, could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines, must prepare and submit a facility response plan to the EPA Regional Administrator.

The EPA defines substantial harm based on a combination of oil storage capacity and potential environmental impact factors. The applicability

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standard most likely to subject a shipyard to this requirement is the definition of substantial harm as a facility that transfers oil over water to or from vessels, and has a total oil storage capacity greater than or equal to 42,000 gallons (1,000 barrels). All facility response plans must be consistent with the requirements of the National Oil and Hazardous Substance Pollution Contingency Plan and applicable Area Contingency Plans.

The EPA requires that a Facility Response Plan ("FRP") follow the format of the model facility-specific response plan provided by the EPA in Appendix F of 40 CFR 112, unless an equivalent response plan has been prepared to meet state or other federal requirements. To be acceptable, the FRP must address the following elements:

- Emergency response action plan
- Facility information
- Information about emergency response
- Hazard evaluation
- Response planning levels
- Discharge detection systems
- Plan implementation
- Self-inspection, drills/exercises, and response training
- Diagrams (site and drainage plans)
- Security systems.

The EPA provides specific guidance concerning the appropriate content of each of the subject areas above. This guidance must be consulted prior to preparing the FRP and its subsequent submittal to the Regional Administrator.

The facility owner or operator must develop a facility response training program to train those personnel involved in oil spill response activities. The EPA recommends that the training program be based on the U.S. Coast Guard's Training

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Elements for Oil Spill Response, as applicable to facility operations. An alternative program can also be acceptable subject to approval by the Regional Administrator. Training includes:

- Proper instruction of facility personnel in the procedures to respond to discharges of oil, as well as applicable oil spill response laws, rules, and regulations
- Training shall be functional in nature according to job tasks for both supervisory and non-supervisory operational personnel
- Trainers shall develop specific lesson plans on subject areas relevant to facility personnel involved in oil spill response and clean-up.

Facility response drills/exercises - The facility owner or operator must develop a program of facility response drills/exercises, including evaluation procedures. The EPA recommends a program that follows the National Preparedness for Response Exercise Program (PREP). An alternative program can also be acceptable subject to approval by the Regional Administrator.

Coast Guard Facility Response Plans - Response plans are required for all marine transportation related ("MTR") facilities that could reasonably be expected to cause substantial harm, or significant and substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shoreline.

Elements of a facility response plan include:

- Qualified individual and alternate qualified individual
- Methods of ensuring the availability of response resources by contract or other approved means

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- Worst case discharge - The response plan must use the appropriate criteria to determine the volume of a worst case discharge
- Specific Requirements for facilities that could reasonably be expected to cause significant and substantial harm to the environment
- Specific requirements for facilities that could reasonably be expected to cause substantial harm to the environment
- Specific response information to be maintained on mobile MTR facilities
- Specific requirements for mobile substantial harm facilities are described, related to maintaining required information at the mobile facility
- Response plan development and evaluation criteria for facilities that handle, store, or transport Group I through Group IV oils
- Response plan development and evaluation criteria for facilities that handle, store, or transport Group V oils
- Response plan development and evaluation criteria for facilities that handle, store, or transport non-petroleum oils
- Training - A facility operator must provide training to each individual with responsibilities under the response plan
- Drills - The response plan must contain detailed information on the type and frequency of oil spill drills to be conducted at the facility

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- Inspection and maintenance of response records
- Submission and approval procedures - A facility's response plan must be submitted to the COTP for initial review and, if appropriate, approval
- Plan revision and amendment procedures

Conclusions: Federal environmental requirements that do or may effect shipyard operations are numerous and complex in their scope and application. Virtually all shipyard processes in both new construction and repair can or maybe subject to some regulatory requirement. For many of the requirements determining compliance is more qualitative than quantitative. To ensure that the shipyard maintains compliance with the regulations it is important a comprehensive environmental management plan is implemented with adequate resources to accomplished the required goal.

The number and stringency of the environmental requirements will most likely increase throughout the foreseeable future.

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